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WHAT OF SUBMARGINAL AREAS IN REGIONAL PLANNING?

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IT HAS become tragically obvious that no one can go very far in the study of large-scale regions without coming upon the phenomena of submarginal areas. The philosophy of regionalism which has reached modulated statement at the hands of *literateurs* has been able to ignore submarginal zones due, no doubt, to their preoccupation with certain folk and artistic values. But if the essence of scientific regional analysis consists in the delimitation, on the basis of various indices, of physical and cultural subregions the problem becomes apparent. Not only do these subregions show consistent differences; certain areas prove consistently subaverage on the basis of every significant index. Such zones of economic and social inadequacy have appeared in the course of the preliminary analyses of the Southern Regional Study and the Tennessee Valley Study. The method of inter- and intra-regional comparison presents its peculiar difficulties, but the setting up of certain norms below which submarginality exists is likely to prove an ungrateful task. It may be somewhat lightened by a review of the standpoint, definition and criteria of submarginal areas in agriculture. The problems they present have accordingly suggested in the present paper (1) an examination of the concept of submarginal lands; (2) a review of the methods of locating submarginal areas; (3) a classification; and (4) an examination of the goals of planning for such areas.[1]

THE CONCEPT OF SUBMARGINAL AREAS IN AGRICULTURE

Like many another concept in social science, the notion of submarginal agricultural areas is more often found implied in discussion than subject to formal definition. It appears on examination that there exist many margins; that while these margins are extremely elastic, their meeting in a complex relationship is necessary to the creation of submarginal areas. One may speak, it is found, of marginal land, of the marginal farm, of the marginal farmer, of the marginal farm-family, of a marginal type of agriculture, and of a margin in relation to conservation.

In its simplest statement one may say that on submarginal land production is carried on at a loss. It is customary to

[1] I am indebted to Evelyn and Lee M. Brooks for their unpublished annotated bibliography on submarginal areas, to T. J. Woofter, Jr. for discussion on the method of locating such areas, to L. C. Gray for correspondence about the classifications of submarginal areas, and to Howard W. Odum and the Southern Conference on Optimum Production, Chapel Hill, N. C. for discussions of the concept of optimum production.

point out, as does the Land Use Planning Committee, that submarginal land exists wherever input exceeds output after allowances are made for depreciation, interest, and the labor of the farm family. Theoretically the margin is fixed at the point where the capital and labor employed on the land may be expected to transfer to alternative employment. Marginality of land is a function of its physical productivity, and the submarginal farm is one so poor that its meagre harvest offers scanty, if any, surplus above subsistence. While this concept inherits in economics by legitimate descent from Ricardo's classical doctrine of rent, geographers are able to make the greatest contribution to the location of the margin of physical productivity. Land utilization has been defined as the science and art of achieving the most effective use of land compatible with a balance of private interests with the public interest. Surveys of soil, topography, and climate are undertaken to determine the gradients of soil fertility, structure, and texture, of contour and slope, and of rainfall which affect cultivation in infertile, mountainous, or semiarid areas. Such land utilization studies lead to a classification of land into marginal, submarginal, and supermarginal on the basis of physical factors.

When one finds submarginal land defined, from a social point of view, as land on which the *average farmer* can not support a decent *standard of living*, there are introduced two other variables by which to gauge marginality—managerial ability and the standard of living. To speak of the average, subaverage, or superaverage farmer is to point to a differential in human factors and to make the management of the farm a functional variable. Thus we have the marginal farmer, an emphasis which might well lead to the study of submarginal social groupings, isolated inbred communities, the so-called rural slums, and communities of the mentally deficient. Certainly variations in intelligence and managerial ability exist, nor can "hard unremitting labor" on the part of the marginal farmer be substituted successfully for management in agriculture.

It may integrate the concept to point out that both physical productivity and the management of the farm find final expression in a standard of living for a farm family. As this standard of living falls below certain norms the farm family becomes submarginal and theoretically the farmer is forced into alternative employment and the farm into other uses or abandoned. Actually this often fails to happen, and the land and social group continue as submarginal. If submarginality be related to the standard of living of the operator as well as the physical conditions of the land, another relative variable has been introduced. Thus, for example, H. C. Woodworth holds that a farm considered submarginal for a young man with a growing family and financial ambitions may be adequate for an older man who has reared his family and wants only independence and an income to support himself and family. Of all the functions of marginality the standard of living appears the most variable. "The continued occupancy of land submarginal for agriculture," L. C. Gray has pointed out, "is frequently prolonged by reason of the persistence of non-commercial standards of living, especially in mountain regions; by low racial standards, as among southern Negro tenants; or by economic and psychological inertia."

We may point to yet another margin. To refer the margin in land utilization to alternative employment of requisite capital and labor serves again to show that the concept embodies more than physical productivity as weighed in subsistence

farming. The transition of the physical production of the farm into a standard of living for a farm-family is mediated in the market and passes through the price system. Thus the delimitation of marginal areas is further complicated by the obvious fact that excess production weakens a commodity's position in exchange and lowers the standards of its producers below norms of comfort and decency. According to Professor A. W. Ashby, the English economist, the failure to reduce the number of farmers engaged in agriculture as rapidly as we increase their efficiency results in the creation of submarginal farmers. Even in progressive regions agriculture carries redundant persons. These farmers continue their production when it is no longer needed, and they suffer and society suffers. Thus overproduction in the market tempts one to speak of the marginal commodity or the marginal farming system. But here the concept again assumes form in that the incidence of increased competition falls heaviest on lands of lowest productivity, creating new submarginal areas under interregional competition and the principle of comparative advantage. If such farmers accept a lower standard of living, the incidence is masked and the farms continue to produce at a loss. Such an example integrates several margins and suggests further in the paper a classification of submarginal areas in relation to the market.

To alternative uses of capital and labor must be added the alternative use of the land. This margin may be extensive or intensive. According to L. C. Gray, the formula for locating the margin on farm land should determine "whether the particular classes of land under consideration can be expected to yield a return equivalent to what the requisite labor and capital can command in alternative employments and leave enough for the land to equal at least what it would earn in the next most advantageous use, say grazing or timber growing." There are to be marked out margins, then, for each of the uses to which land may be put, agriculture, grazing, and forestry. By research it may be possible to determine such margins for each region, each type of farming area, and for each major crop in relation to its market position. O. E. Baker has pointed out the hierarchy of values that exists in land utilization from its highest value in urban building sites to its lowest in forest lands. The assessed valuation of land in New York City, for example, is more than a fourth of that of all the farm land of the nation. The value of land in relation to its classification offers one of the main indices of marginality.

From the long-run, social point of view we may point out another margin. Dean Thomas R. Cooper has said that certain areas may be regarded as submarginal because the present method of utilization is destroying all land resources for future use. This use of the term emphasizes public rather than private interest and sets up a margin of conservation over against the present productivity of lands subject to over-exploitation.

Implied in the concept of submarginal areas is the working hypothesis that the land involved has not yet reached its adequate utilization. This phrase should be interpreted as optimum rather than a more intensive or maximum utilization. In the present situation the optimum utilization of much land is more likely to be extensive than intensive. From this point of view submarginal areas may be regarded as consisting of:

1. Land whose optimum utilization

has not yet been achieved (e.g., Gulf Coast Prairies before the introduction of rice culture.)

2. Land whose previous utilization has been overthrown by a shift in prices or crop areas, etc. (e.g., Carolina tidewater rice area after shift to Coastal Prairies, etc.).

3. Any alternative concept must, it seems, be frankly one of land abandonment.

All our pioneering history, our population pressure, all our speculative optimism have tended to encourage the transition from extensive to intensive utilization. The American tradition is "from forest to farm." We have yet to obtain an orderly reversal of the process for areas whose existing farming systems have been overthrown by shifting margins in agriculture. From farm to forest, that is, from an intensive to an extensive utilization at present seems attainable only through costly and disorderly processes of tax delinquency, etc. The speculative motive can always be counted on for subdividing. The profits in land settlement have come from pushing land from one margin to another in the hierarchy of land values, from forest to farm, from farm to building site. Only governmental action can be counted on to assemble submarginal and tax-forfeit farms in blocks suitable for reforestation.

LOCATING THE SUBMARGINAL AREAS

Many of the previous studies such as those in New York State, of Wisconsin Cut-Over Lands, and the Michigan Land Survey have located marginal areas by small scale detailed surveys in the field. The experience of the Southern Regional Study suggests the localization of larger marginal areas on the basis of available indices of physical productivity, market value, etc.

The physical margins of land utilization deserve first consideration. The Bureau of Agricultural Economics issued in 1933 a map of natural Land-Use Areas prepared by C. P. Barnes and F. J. Marschner. This map divides the United States into two main areas. The first of these contains very little land whose use remains unsettled; the second contains much land whose best utilization remains a problem. Little need be said of the land of settled use. In nine major types it ranges from land of demonstrated quality supporting remunerative agriculture in normal times to western grazing lands, to rough forest land largely in public ownership, to desert lands with no use indicated. It is not the contention that non-problematical areas are all good land; it is simply pointed out that where the land use is not debatable no submarginal settlements are made.

Problematical areas, on the other hand, contain much land whose best use as between farming, extensive grazing, forest production, or combination is still unsettled. Such areas, say the compilers, may consist of undeveloped land in which the desirability of needed drainage or clearing has not been demonstrated, or contain land on which farming has been marked by failure, rural poverty, erosion, and land abandonment. Often in such large-scale areas are found small land areas of good quality. These problematic lands are divided into fourteen types ranging from semi-arid plains in which the use alternates between farming and grazing because of unreliable rainfall to Gulf Tidal Marshes, Everglades, Gulf Coast Prairies, and Mississippi Lowlands in which the desirability of costly drainage operations remains doubtful. Certain forested and cut-over lands, highland and piedmont areas, also fall in this group. Two hundred seventy-two subareas are delimited, of which 122 are definitely problematic.

Turning to economic conditions one is

prepared to find the task of locating submarginal areas more complex. Over sixty per cent of the farms in the United States are less than 100 acres in size, averaging a capital investment of some $5,350. The 1930 census figures show that only 34.7 per cent of American farms grew products totalling over $1,500 in value. Approximately fifty per cent produced goods valued at less than $1,000; 27.9 per cent at less than $600; 15.2 per cent less than $400; and 6.6 per cent less than $250. These figures include the value of products sold, exchanged, and consumed on the farm. From these figures must be subtracted all expenses of production before we can presume any net incomes from these farms. • Wherever one sets the norms such figures serve to show the widespread extent of submarginal farms. The location of these submarginal groups may be plotted on the basis of figures on the value of products grown per farm, the value of farm land per acre, the average value of farms. These figures are available by counties in the Census of Agriculture and have been given graphic presentation by such students as O. E. Baker and L. C. Gray. Experiments with adjusting the norms for a region in something like a normal curve of distribution lead to the selection of certain arbitrary norms for a region. Thus it might be found convenient to denote as submarginal those counties whose farms averaged less than $2,500 in value of land, buildings, livestock, and equipment; whose annual product brought less than $500, whose acres are valued at less than $22.50 each. Subsistence and part-time farms in the highlands are likely to produce less than $500 worth of products. Plantation areas because of small-size tenants' holdings are dotted with farms worth less than $2,500, but the value of the land is likely to exceed $22.50 per acre. Thus one index balances another and a regional norm for marginal farms may be arrived at. Such data on farms should also be balanced against a ratio of lands not in farms, whether uncleared, cut-over or abandoned. Since contiguous vacant areas exercise a depressing psychological and economic influence on good land, it is desirable thus to balance the degree of marginality of crop land against the percentage of land not in crops.

The accompanying exhibit is intended to show just how far a regional study using available data on a county-wide basis may be expected to go. By inspection and statistical comparison the seven poorest agricultural counties in the Tennessee valley section of the Appalachian Highlands were discovered. The farm products sold, traded, and used average less than $500 per farm for the year 1929. These counties are Polk, Van Buren, and Monroe in Tennessee, Cherokee in North Carolina, and Fannin, White, and Lumpkin in Georgia. Because of the presence of mining and manufacturing in Polk and Monroe and of Indians in Cherokee, the three counties were discarded. The four counties remaining have no mining, no manufacturing, no urban population, and are almost entirely white with from sixty-two to eighty-four per cent of the population dwelling on farms. Inspection of the accompanying statistical indices selected from data accumulated in the period 1920 to 1930 seems sufficent to indicate submarginality on any economic and cultural basis. (See Table I.)

Since submarginality is not likely to be county-wide because of the existence of certain subaverage strips and pockets of land, the location analysis should be further refined. Available indices on land utilization—crops, pasture, wood lot, idle and fallow land; on farm values—total farm, dwellings, land, and implements and machinery—can be averaged for submarginal areas by minor civil division. These smaller areas are then

TABLE I

A STATISTICAL ANALYSIS OF FOUR SUBMARGINAL AGRICULTURAL COUNTIES IN THE SOUTHERN APPALACHIANS

(Based on data of period 1920–1930)

	VAN BUREN, TENNESSEE	LUMPKIN, GEORGIA	FANNIN, GEORGIA	WHITE, GEORGIA
I. Population and occupations				
Population 1920	2,624	5,240	12,103	6,105
Population 1930	3,516	4,927	12,968	6,056
Per cent change 1920–30	33.9	−5.9	7.1	−0.8
Density 1930	12.0	17.6	32.3	24.7
Number of families 1920	542	1,120	2,415	1,225
Size of family 1920	4.8	4.7	5.0	4.9
Urban population 1930	0	0	0	0
Average farm household 1925	5.1	4.5	5.0	4.9
Rural farm 1930	2,414	3,974	7,910	4,565
Per cent farm population	68.5	80.6	60.9	75.5
Per cent negro farm population	0	4.1	0.6	6.5
Value manufacturing 1927	0	0	0	0
All gainful workers 1930	1,106	1,523	4,135	2,121
Agricultural workers	640	1,116	2,384	1,619
Per cent of workers, agricultural	57.8	73.2	57.9	76.3
Unpaid family workers	144	147	1,043	625
Per cent of unpaid family workers	22.6	13.1	47.9	38.6
II. Agriculture and types of farming				
Number of farms 1925	427	883	1,523	752
Average farm household 1925	5.1	4.5	5.0	4.9
Per cent of tenancy 1925	25.1	40.1	27.8	44.7
Average size farm 1925	107	84	91	86
Average acreage in crops	30	21	19	25
Average agricultural income per farm 1922–25	$494	$113	$85	$226
Value crops 1924	$384	$329	$300	$444
Value of land and buildings 1925	$1,456	$758	$1,152	$1,152
Value per acre	$15	$9	$13	$18
Value per average farm 1925	$1,999	$1,025	$1,472	$1,816
Per cent of types of farms 1930:				
Self-sufficing	56.3	47.0	51.0	27.6
Part-time	8.8	1.3	18.5	5.7
Cotton		20.8		35.9
General	12.9	17.2	10.3	13.8
Animal specialty	10.8			
Average acreage per farm (all farms) 1930	106	91	89	91
Self-sufficing	78	90	90	88
Cotton		89		83
General	161	118	152	111
Animal Specialty	139			
Value land and buildings per farm (all types) 1930	$1,703	$1,053	$1,469	$1,582
Self-sufficing farms	1,301		1,203	1,219
General	2,725	1,336	2,320	1,824
Cotton		1,154		1,610
Animal specialty				
Value of products per farm	$470	$360	$482	$388
General farms	618	507	822	421
Cotton farms		414		515
Self-sufficing farms	319	296	428	207

TABLE I—*Concluded*

	VAN BUREN, TENNESSEE	LUMPKIN, GEORGIA	FANNIN, GEORGIA	WHITE, GEORGIA
III. Social and economic data				
Per cent, age groups:				
Attending school, 1930 7–13	85.1	90.3	90.1	86.8
14 and 15	73.0	58.2	79.5	75.7
16 and 17	40.7	44.9	50.7	50.4
18–20	11.2	16.6	16.9	16.9
Per cent illiterate, 10 years and over	7.2	9.1	3.3	5.9
Bank deposits per capita 1927	$26	$35	$23	$49
Saving deposits per capita 1929		$43	$28	$43
Postal receipts per capita 1927		0.81	0.30	0.49
1 income tax return per persons 1926	3,159	1,283	631	608
1 telephone per persons 1929	1,758	48.1	4,294	6,062
1 electric consumer per persons 1926	0	43.9	109.7	0
1 auto per persons 1927	25.3	16.9	30.8	16.3
1 magazine per persons 1929	41.3	30.4	61.0	38.8
1 daily paper per persons 1927		30.0	105.0	52.3
1 weekly paper per persons 1928		4.9	18.2	12.6
Number of retail stores 1927	14	30	85	55
Average cutomers per store 1927	232	167	149	110

fitted against the background of soil and topographical maps to further integrate the pattern of submarginality.

It also may prove of value to relate the submarginal zones to type of farming areas plotted from the data first provided in the 1930 Census. Both the dominant and secondary crop system are important. It is found, partly because of the peculiar census definition, that part-time and self-sufficing farms predominate in submarginal areas while general farms and dairy farms appear supermarginal. Any further interpretation of submarginal areas in terms of communities, topography, soil plots, transportation facilities, economic organization, biological and social adequacy will, no doubt, have to penetrate county and minor civil division lines and make use of field studies.

A CLASSIFICATION OF SUBMARGINAL AREAS

Many classifications of submarginal areas are possible in relation to physical conditions, types of farming, or economic conditions. The present paper offers a classification based on relation to the market.

AREAS ISOLATED FROM THE MARKET

Where isolated from the market, areas of bare subsistence appear. As in the highlands such areas were often settled in the pioneer period, and because of topography, unfavorable soils, social and intellectual isolation, backwoods standard of living have persisted in non-commercial farming. Furnishing a meager living below standards of comfort and decency and no savings, such farms may be self-contained but they are not self-sufficing in the real sense of that word. Often they are not self-contained in that the operator supplements low incomes by employment in "public works" and rural industries. After communication and transportation agencies are opened up, such areas remain isolated from the market in that they produce non-staple commodities not offered in the market or fail

to organize markets for their tenderable products. Nevertheless, such farms, partly because they are isolated from the market, have never been over-capitalized or mortgaged and thus offer a real type of economic security in that they carry no overhead charges except taxation. This security may be neutralized for succeeding generations by pressure of population which serves to force the farmer out on poorer lands and steeper slopes. In certain Appalachian and Ozark regions may be found the best examples of isolated submarginal areas. The South has a higher ratio of such isolated subsistence farms than any comparable area in the nation. This group has been recruited by the recent exodus from the cities.

AREAS BEATEN IN THE MARKET

Genuinely submarginal in the classical sense, certain areas grow staples at cost of production higher than the average long-run market price. Such cash-crop staple areas continue in existence by habituating their producers to a chronic low standard of living. Some of these areas, suggests L. C. Gray, were settled by would-be farmers who were beaten from the start because they made a poor choice of land. W. W. Ashe estimates that ten per cent of the cotton crop is normally produced on such submarginal areas. Moreover, the extent of such areas available for cotton is so great that a rise in prices always operates to overthrow any level of stabilization. Population pressure and the institutional heritage operate to keep the system functioning at subnormal levels after it has proved economically indefensible.

AREAS SUBJECT TO ECONOMIC INCIDENCE AND CHANGE IN THE MARKET

In the present shifting, depressed state of agriculture lack of competence in economic competition offers no proof of the submarginality of social groups. Thus, before the business depression, O. E. Baker estimated that there were two million men on farms receiving less incomes than men of no greater ability or invested capital in urban industry. Accordingly, submarginal farming areas can not be delimited on the basis of short-run economic considerations of the margin at which production takes place at a loss. To so delimit these areas would make it appear that Iowa, blue ribbon land area of the United States, is full of struggling submarginal farms. This is due to the fact that in relation to the market, overcapitalization and submarginality produce the same effect—deficient incomes and operation at a loss. The incurring of indebtedness leading to loss, bankruptcies, and foreclosure, after a fall in prices can not be regarded as a mark of submarginality.

Nevertheless, special conditions of economic incidence, if long continued, do create submarginal zones. Shifts in demand, changes in the prices of farm products, in agricultural techniques, in plant and animal varieties are constantly shifting regions of crop production and creating new marginal areas. The erection of tariff barriers, the loss of foreign markets, the transition from an international to a national economy also operates to create marginal zones. Increase in the cotton acreage in Western Texas has made many southeastern farms submarginal. Certain areas of the Georgia black belt offer another example of economic incidence. The severe initial shock of the boll weevil invasion destroyed the credit agencies that mediated between landlords and tenants. The severity of the weevil infestation passed, but credit relations could not be reëstablished. Many Negro tenants migrated north, and the area became

submarginal. Cash-crop areas, export crop areas, areas devoted to expanding crops, are especially subject to economic incidence in the market.

AREAS THROWN ON THE MARKET

Increasingly significant in submarginal areas are lands newly thrown on the market. Cut-over lands, lands open to homestead, and lands offered for sale for taxes fall in this category. Cut-over areas, having exhausted their usefulness in the category of forested lands, are thrown on the market, classified as farm lands. Tax delinquent lands having failed under former owners are offered to new ones who may be inclined to take such speculative chances. Practically all of the remaining government lands open to homesteading are submarginal for agriculture. Irrigation and reclamation projects in the semi-arid West have unwisely thrown highly capitalized lands on the market. The largest portion of such newly created marginal areas are attributed to cut-over lands. Such lands are likely to be much lower in fertility than those cleared for settlement by earlier pioneers. The term thrown on the market may be taken as referring either to the land or its products which find their way into channels of trade. If not taken up, such areas when offered for sale lower land values and affect the capitalization of contiguous areas. If subdivided and settled as farms, orange groves, truck plots, etc., they throw unneeded products on a market afflicted with agricultural surpluses and reduce their unpractised operators to submarginal farmers. Tax delinquency of cut-over areas and adjacent marginal lands is often the result of the speculative optimism that seems inherent in our lack of planning. Such lands bought and held for speculative purposes are likely to become delinquent because taxes must be paid by owners out of other incomes. Only where reforested can such land be regarded as held off the market. The land is retained in its original classification and the final timber crop is to be regarded as a replacement rather than a new supply thrown on the market. Only when actually taken over by the state rather than offered for sale are tax delinquent lands to be regarded as held off the market. The prevention of stranded settlements and the creation of new submarginal areas centers here about the new areas thrown on the market.

THE ABANDONED AREAS

Abandoned land areas represent mistakes in land utilization historically recorded.[2] They stand as tragic monuments to the westward course of settlement, interregional and inter-commodity competition, and to disorders of nature and nature's insects. With such exceptions as failures in dry farming, abandoned ranches, etc., all abandoned areas are found in the forested eastern part of the United States. It is estimated that about fifty-two million acres once considered agricultural have been abandoned in the Eastern United States. Historic examples are the earliest settled portions of America: New England, a classic example for fifty years, the Virginia Tidewater beginning at Jamestown, the Charleston and Savannah hinterlands. Many farms in the Southeastern Piedmont and Mississippi loessial bluffs have been abandoned because of erosion; the Charleston rice hinterland was abandoned because of a regional shift in crops; areas of the Georgia Black Belt were abandoned because of boll weevil infestation.

The final destination of genuinely sub-

[2] See Chapter by C. I. Hendrickson in *A National Plan for American Forests*. Senate Document 12, 73rd Congress, 1st Session, 1933, Vol. I.

marginal areas is abandonment. As costly as is the process of farm abandonment, in our present planlessness holds M. L. Vaughn, it must be regarded as the leading sign of progress in land utilization. In line with our present classification abandoned areas may be regarded as land taken out of the market. As a matter of fact, abandonment of farms appears as a first step in opening the land to alternative uses—forestry, recreation, parks, etc. The existence of abandoned farms suggests the approaching submarginality of nearby areas. The presence of such areas afford indices of unfavorable economic and social conditions. They increase the tax burden of settled areas and weaken community services and institutions. Land utilization studies are interested in the future use to which the land may be put, but a study of social groupings should attempt to follow the displaced farmers to see what adjustments they are making elsewhere.

PLANNING FOR THE SUBMARGINAL AREAS

To speak of planning for the submarginal areas is to abandon at the outset the dogma that the processes of *laissez-faire* work themselves out for the benefit of society as a whole. No longer is it possible to hold to that orthodox notion of marginal economics that submarginal lands and operators are forced out of production, thus restoring the economic equilibrium. There are many margins and, as we have seen, one margin so encroaches upon another that the effects are masked. The student of land utilization finds, for example, that poor land continues in cultivation by lowering the living standards of its operators, that present production continues by encroaching upon the future use of the land. Nor can non-commercial farmers who isolate themselves from the market be brought under the marginal dialectic.

That the continued existence of genuinely submarginal areas is socially undesirable scarcely admits of debate. Submarginal farming may be considered parasitic on three counts. It is parasitic on its worker in that it fails to provide a living wage unless supplemented from other sources. Many such areas are parasitic on state equalization of taxes for funds for social and community services as education and roads. In a number of school districts in the highlands of West Virginia, a study showed that state aid for school purposes was sufficient, if capitalized, to purchase all the farms in the area. Finally, many submarginal farms, at loss to themselves, continue to add to agriculture surpluses and thus threaten the security of farms above the margin.

Accordingly, the diversion of submarginal agricultural areas to other uses must take first place among the major goals of regional planning. The values to be served are indicated in the following outline.

GOALS OF PLANNING IN RELATION TO SUBMARGINAL AREAS

I. *Economic:* (1) Reduce agricultural surpluses and avoid long-time production in excess of demands by cutting out marginal producers (Not operative in self-sufficing areas); (2) Raise standards of living by transferring marginal producers (Where shall they go?).

II. *Conservation of Resources:* (1) Change land to its optimum utilization (Agriculture to grazing to forestry); (2) Provide for future timber supply; (3) Conserve soil resources by prevention of leaching and erosion and by the protection of water sheds and game conservation; (4) Provide for parks, recreation areas.

III. *Sociological:* (1) Conserve community life by promoting denser settlement,

creating firmer tax bases for social services and institutions; (2) Prevent future blind-alley settlement on marginal areas.

The means by which these goals may be achieved call for more extended treatment. L. C. Gray contends that "the essential foundations of future land policy must be laid in research" and the national policy should be a synthesis of regional long-time outlooks. Some of the factors to be considered are the income levels that justify land abandonment, including the relative value of labor and investment in other fields; the costs of moving to another environment which are social and psychological as well as economic; and the effect of occupancy or abandonment on schools, roads, and other utilities or dependent industries, and on the conservation of natural resources. The author holds that the redirection of economic life in subnormal areas should at present be undertaken only where there exists actual distress by reason of decay of agriculture or the passing of timber resources.

The National Land Use Planning Committee suggests the following program for submarginal areas in the Tennessee Valley Development. It may well be applied to other regions.

LAND PLANNING FOR TENNESSEE VALLEY

1. Inventory and classification of land resources on the basis of present uses and ownership.

2. Public acquisition of submarginal farm and forest lands, and of certain areas significant for water shed protection and scenic interest.

3. Bilateral compacts between Federal government and several states as to division of responsibility in the ownership and management of public lands.

4. Removal of population from truly submarginal areas with due consideration of interests and attitudes of those affected.

5. Decentralization of industry, the creation of new industrial centers to supplement marginal incomes by fireside and rural industries dependent on electrification, etc.

6. Control of speculative exploitation.

7. The reorganization of local governments.[3]

It remains to discuss the land policy and regional planning in relation to our classification of submarginal areas. In this treatment we shall begin with those areas which offer the simplest problems for planning and proceed to those more complicated.

AREAS THROWN ON THE MARKET

It is apparent that wherever possible these areas should be retired from the market. O. E. Baker has well presented the Department of Agriculture's official position that no further land development should be encouraged in the United States. The least the Federal government can do in the present state of agriculture is to abandon further costly reclamation and irrigation projects and to retire from homestead all lands likely to become submarginal. Wherever shown to be submarginal, tax delinquent lands should be taken over by the state rather than offered at public sale to lower land values and tempt speculators and unwary farmers to their ruin. The situation with cut-over lands offers greater difficulty, but, wherever possible, large timber corporations should be encouraged in reforestation and planned cutting programs, using as much of the available labor supply as possible. Subdivision and sale of these lands to prospective farmers at the present is clearly against public policy.

[3] See the discussion of the Tennessee Valley Regional Plan by T. J. Woofter, Jr., in this issue of SOCIAL FORCES.

THE ABANDONED AREAS

The first problem presented by abandoned areas is that of classification. Where classified as submarginal they offer first the problem of preventing resettlement. Where taken over by the state for delinquent taxes, resettlement should be prevented and the land should be surveyed for the determination of its future utilization in grazing lands, forests, parks, etc. Many farms which have been abandoned because of economic incidence, foreclosures, boll weevil infestation, break down of credit facilities, etc. can not be classified as genuinely submarginal. It may be found possible to settle on such lands submarginal farmers from other areas. Certainly the present quota and allotment system should not be developed so as to keep such supermarginal areas permanently out of production. What they have lost in temporary upheavals in the market, they may regain on the basis of land resources in the long-run readjustment. Most of the abandoned areas, however, should be diverted to other uses than farming as soon as feasible.

AREAS BEATEN IN THE MARKET

It is the areas beaten in the market that call for the most drastic reversal of our traditional land policy. Their continuance in production bodes no good to their operators, their competitors, nor to consumers. Nothing short of the purchase by the state of all genuinely submarginal farm-lands and their complete retirement for cultivation will meet the situation. In his annual report, Secretary of Agriculture Wallace suggests that it might be cheaper for the government to buy certain farm land outright and retire it from production than to continue the policy of renting such land as will be done, for example, under the 1934 cotton plan. Speaking before the American Economic Association in December, 1933, R. G. Tugwell, Assistant Secretary of Agriculture, proposed that the government buy up fifty million acres or more of land in four chief areas: (1) The Appalachian Highlands and Piedmont Plateau; (2) Michigan and Minnesota; (3) The western fringe of the Great Plains; and (4) Patches in eastern Kentucky; and by converting it into parks, game preserves, grazing ranges, etc., take it out of production. Thus, said Tugwell:

> The area of land in production would be sufficiently limited so that it could be operated at its utmost efficiency without flooding markets and destroying exchange ability.
>
> Such a system would envisage a commercial agriculture made up of the most efficient farmers operating the best of our lands with the remaining lands being used in other ways, and the remaining farmers devoting their time to other occupations.

Similar adjustments should be made for submarginal areas in cotton, wheat, tobacco production, etc. Only when the areas beaten in the market are removed as disturbing factors can adequate recovery be planned for normal agricultural areas.

AREAS ISOLATED FROM THE MARKET

No solution so clear cut or drastic seems available for areas of non-commercial and subsistence farming. The notion of submarginality, L. C. Gray points out, is a commercial concept developed in England where agriculture was and is highly commercial. The criterion of marginality, i.e., production at a loss—is difficult of application when production is not carried on for the market. Reference must be had to the standard of living and to the conservation of land resources. Wherever it can be shown that the standards of living in self-sufficing areas are low and progressively falling, or that the cultivation of sloping areas is destroying

land resources for the future—such areas should be retired and the population transferred. But to transfer this population to areas producing staples for the market is to increase the difficulties of agriculture. Moreover, at the same time this proposal is made it is being suggested that struggling industrial workers and commodity crop farmers be settled on self-sufficing farms.

Lately, L. C. Gray, J. D. Black, and others have reached the conclusion that there is too great a tendency to draw mechanical conclusions as to policy from the concept of submarginality. Gray believes that we should now go very slowly in attempting to eliminate submarginal land in the Southern Appalachians. For one thing these areas have undergone no such general farm abandonment as characterize certain other areas. Traditionally the southern mountaineer is trained in a self-sufficing mode of life: mining and rural industries bring part time employment on his "amphibian farms." When one thinks of the Alpine farmers one is inclined to place less emphasis on the limitations of nature and more on the capacity of man. The isolated farmer can diversify his diet, improve his cookery, use his spare-time for improving his housing and furnishings, local roads and schools, and for developing an improved wood lot. Above all he possesses leisure, precious goal for hard-driven mortals elsewhere. But after all, the main reason the regional planners doubt the advisability of transferring the farmer isolated from the market is that he and his production are not needed on any known market. If it can be made a question of transferring him for a less to a more productive self-sufficing area the problem is nearer solution. The difficulty here is that in the Southern Appalachians settlement is already as compact as topography will permit. The Tennessee Valley plans quoted above with their emphasis on decentralized and part-time industries offer the most hopeful leads.

AREAS SUBJECT TO ECONOMIC INCIDENCE AND THE CONCEPT OF OPTIMUM PRODUCTION

The areas of economic incidence are best provided for under the program for the recovery of normal agricultural areas. Many of the difficulties attendant upon shifting markets will be much nearer solution when the submarginal areas are taken care of. Scientific research, agricultural extension, and agricultural credit facilities have provided for increased efficiency and production. So far has this program gone in making two blades of grass grow where one grew before that some wag has suggested that the time has come for farmers to support industrial extension workers who will lead unwary factory hands to make more and cheaper goods and thus overproduce their market to the advantage of their agricultural consumers. The agricultural adjustment program marked the first revision of policy with the realization that the control of surplus production had become more important than the increase of efficiency. Our pioneer history has left us the conviction that every forest should be converted into farms, the fallacy of maximum rather than optimum land utilization. Maximum production in agriculture has at last given way to a doctrine of minimum production. The time has come in our regional planning to develop an ordered notion of optimum production.

The outstanding difficulty in the application of programs affecting submarginal areas is that no clear need exists for further production in any of the agricultural staples. This means that shifts in agricultural areas cannot be dictated by the use for which the land type is fitted.

Thus certain areas might best be fitted for utilization in truck cropping, while at the same time an ascertainable surplus existed in that particular truck crop. Any proposal to encourage population movements from submarginal areas is confronted by a similar surplus of labor in other lines of industry and agriculture. To advocate the straightforward abandonment of certain poor land areas is to imply that industry somewhere, somehow can absorb additional labor supplies. This is not true at the present. This realistic view leads to several alternative plans each with its drawbacks.

1. The time-honored dogma of increased efficiency is an individual solution—not a solution for the group as a whole. It will increase surpluses, thus placing more producers in the submarginal group.

2. The advocacy of increase in self-sufficient farming, so-called "live at home program," may be shown by further research to lead the return to a backwoods standard of living for that group while at the same time decreasing standards for the group engaged in growing staples by reducing the outlet for their surplus production. This creates an imbalance which can not and should not be preserved at the expense of the self-sufficing farmers.

3. The administration's present program of equalized restriction of production serves to take both workers and land out of production. From the viewpoint of the producers it can be justified on the ground that it will distribute evenly an increased leisure while increasing returns per producer. From the viewpoint of land utilization it possesses the fallacy of taking out of production an equal amount of supermarginal land along with submarginal land. To continue to work this submarginal land means higher costs of production which must be passed on to the consumers. This increased cost appears in addition to the higher prices encouraged by a straight pro-rata reduction of acreage.

4. Frankly, I wonder if these considerations do not lead us back to research on the concept of optimum production. Optimum production can be considered as a balanced maximization of production in which optimum land utilization sets one limit and optimum consumption habits of the population sets the other. H. R. Tolley has stated that the problem is to determine for each region the farming program that is likely to yield the best returns in the years ahead in the light of trends in the United States and foreign countries and then to coördinate regional objectives in order to prevent ruinous inter-regional competition. This concept recognizes the principle of comparative advantage in balancing crop regions and commodities against each other. Against this balanced maximization of production can be set a balanced maximization of consumption in which whole populations can be raised to higher levels of comfort and decency.

This principle of balance is functional, giving us a moving equilibrium of optimum quantities of commodities and prices when stabilized in relation to industrial production. I consider the optimum production concept implicit in the Agricultural Outlook forecasting of the U. S. Department of Agriculture. When perfected, this may be regarded as the country's farming budget, the National Agricultural Policy for the United States.

The scientific approach to this problem of balanced optima of production has assumed two forms at the hands of agricultural economists. They are:

1. *Market studies:* Supply and demand analyses of commodities in competition. The outlook program.

2. *Individual adjustment:* Farm Management Studies. The first is devoted to outlook estimates of commodity supply and demand, shifting crop areas, foreign trade, etc., the technical market analysis of the economist dealing with the price system. The second tells what farmers in particular areas on certain types of soil should grow, how to lay out and organize their farms, keep books, etc. It deals with individual adjustment in relation to physical factors and the market. Each approach supplements the other. Given the retirement of submarginal lands and the adoption of an adequate program of land utilization and optimum production, the regional planner may yet envisage a stable and healthy agriculture.